

Notice of Allowability

Application No.

10/643,792

Examiner

John Pezzlo

Applicant(s)

MESECHER ET AL.

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

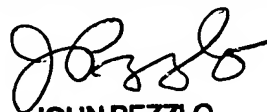
1. ☒ This communication is responsive to amendment received 22 February 2005.
2. ☒ The allowed claim(s) is/are 1-25.
3. ☒ The drawings filed on 22 February 2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


JOHN PEZZLO
PRIMARY EXAMINER

DETAILED ACTION

Allowable Subject Matter

Claims 1-25 are allowable over prior art of record.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Applicants have claimed the following uniquely distinct features in the instant invention, which are not found in the prior art, either singularly or in combination.

1. Regarding claim 1 - A receiver configured to receive a CDMA communication signal transmitted on an RF carrier frequency and to demodulate said RF carrier frequency to provide a received information signal, the receiver including components configured to correct phase errors in an information signal which has been modulated on said RF carrier frequency, the receiver comprising:

 circuitry including an adjustable bandwidth filter component configured to generate a mixing signal and to combine said mixing signal with said information signal to produce a correction signal,

 an analyzer configured to analyze the phase of said correction signal and to generate an error signal based on the deviation of the analyzed phase from a reference phase, and

a bandwidth controller configured to recursively adjust the phase of said correction signal such that the phase of said correction signal is substantially equal to said reference phase, said bandwidth controller configured to control the bandwidth of the adjustable bandwidth filter component by selecting a bandwidth based on the error signal generated by said analyzer.

2. Regarding claim 12 - A method for use with a receiver equipped to receive a CDMA communication signal transmitted on an RF carrier frequency, demodulate said RF carrier frequency to provide a received information signal, and correct phase errors in an information signal which has been modulated on said RF carrier frequency, the method comprising the steps of: generating a mixing signal and combining said mixing signal with said information signal to produce a correction signal based on filtering at a selected bandwidth, analyzing the phase of said correction signal, generating an error signal based on the deviation of the analyzed phase from a reference phase, recursively adjusting the phase of said correction signal such that the phase of said correction signal is substantially equal to said reference phase by adjusting the selected bandwidth used to produce said correction signal based on said error signal.

3. Regarding claim 20 - In a CDMA communication system, a method for correcting an incoming signal for phase errors, the system including a receiver having an adjustable bandwidth phase-locked loop (PLL), the method comprising the steps of: (a) comparing the incoming signal with a correction signal to produce an error signal, (b) normalizing the error signal into a normalized signal, (c) analyzing the normalized signal to determine a quantized phase error signal, (d) generating a control signal in response to the quantized phase error signal, (e) adjusting the bandwidth of a PLL filter in response to the quantized phase error signal and the control signal, wherein the PLL filter generates an error voltage, (f) sending the error voltage to a

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voltage controlled oscillator to generate the correction signal, and (g) repeating steps (a) through (f) while the incoming signal is being received.

4. Regarding claim 24 - An adjustable bandwidth phase-locked loop for use in a CDMA communication system to correct an incoming signal for phase errors, wherein the incoming signal is modulated on an RF carrier signal, said phase-locked loop comprising: a comparison mechanism for comparing the incoming signal with a correction signal, said comparison mechanism producing a complex error signal having an I (in phase) component and a Q (quadrature) component, a processing mechanism for normalizing the complex error signal and producing a quantized phase error signal, a phase-locked loop filter having an adjustable bandwidth, said phase-locked loop filter generating an error voltage in response to the quantized phase error signal, a voltage controlled oscillator for generating a correction signal in response to the error voltage, and a bandwidth adjustment mechanism for controlling the bandwidth of said phase-locked loop filter, said bandwidth adjustment mechanism generating a control signal for controlling said phase-locked loop filter in response the quantized phase error signal.

The closest prior art, either singularly or in combination, fail to anticipate or render the above limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 1-25 being allowable, **Prosecution On The Merits Is Closed** in this application.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Ammicht et al. (US 5,598,468) discloses a method and apparatus for echo removal in a communication system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pezzlo whose telephone number is (571) 272-3090. The examiner can normally be reached on Monday to Friday from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C.

or faxed to:

(703) 872-9306

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For informal or draft communications, please label "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to:

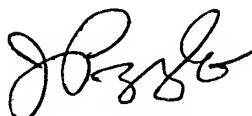
Jefferson Building

500 Dulany Street

Alexandria, VA.

John Pezzlo

3 May 2005



JOHN PEZZLO
PRIMARY EXAMINER